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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,842

03/31/2005

Frederic Noelle

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116 7590 03/13/2009  
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EXAMINER

HUDA, SAEED M

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

03/13/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/529,842	NOELLE, FREDERIC	
	<b>Examiner</b>	<b>Art Unit</b>	
	SAEED M. HUDA	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/31/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Election/Restriction*

1. Applicant's election without traverse of group II claims 4-12 in the reply filed on 01/26/2009 is acknowledged.
2. Claim 12 has been changed from a method claim to an apparatus claim, consistent with the claims found in the elected group.
3. Claim 13 has been added and contains no new matter.
4. Claims 1-3 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 01/26/2009.

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 4-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - a. Regarding claims 4-13, the phrase "the mat being delivered on a first movable conveying element to means for consolidation by entanglement" is cumbersome. For examination purposes, The Examiner interprets this phrase to mean "the mat being delivered onto a first movable conveying element means for consolidation by entanglement"

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- b. Regarding claims 10-11, the claim recites a limitation with regards to "a means". It is unclear what "means" is being referred to. Clarification is required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4-5 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noelle (US 5768756) in view of Brabant et al. (US 6050469) and further in view of Vuillaume et al. (US 2002/0168910 A1).

- a. Regarding claim 4, Noelle teaches a process and apparatus for the manufacture of non-woven unpatterned cloth (abstract) where said cloth is consolidated (column 2, lines 1-10). Noelle goes on to disclose that a base cloth (mat of filaments) is placed on a conveyor belt 1 (first conveyor) (column 3, lines 65-67 and figure 1). In addition, there is a means for causing the mat of filaments to pass from the first conveyer (figure 1) where said means is a second movable conveying element (20) which has a vacuum source connected to it in such a manner to form a vacuum suction box (figure 1 and column 4, lines 1-5) which maintains the mat on the outer surface of the second movable conveying element. Noelle fails to teach the use of a spun-bonding tower, a first movable conveying element, and that consolidation occurs by entanglement.

Brabant et al. teach a fiber web transferring device comprising a conveyor belt and a suction cylinder (abstract). Brabant et al. go on disclose that the web leaves the suction cylinder 4 and is put on calendering cylinders 3a and 3b (column 3, lines 25-26 and figure 1) (first movable conveying element). It would have been obvious to one having ordinary skill in the art at the time of the invention to use the first movable conveying element of Brabant et al. in the invention of Noelle because said first movable conveying element can perform additional operations to the web that may not be able to be performed before coming in contact with the suction cylinder such as the process of calendering (column 3, lines 25-26). Brabant et al. in view of Noelle fail to teach that the use of a spun-bonding tower or that consolidation occurs by entanglement.

Vuillaume et al. teach a method and apparatus for producing a complex non-woven fabric where the fabric is placed on a conveyor utilizing a production unit 1 (spun-bonding tower) (figure 1 and abstract). Additionally, Vuillaume et al. disclose that the apparatus uses water-jet bonding and hydro-entanglement consolidation (abstract). It would have been obvious to one having ordinary skill in the art at the time of the invention to use the production unit 1 and hydro-entanglement consolidation means in the invention of Noelle because these is an art recognized apparatus and means of non-woven fabric processing as exemplified by the teaching of Vuillaume et al.

b. Regarding claim 5, Noelle teaches that the second movable element 20 is a perforated rotating drum (column 4, lines 4-6 and figure 1).

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c. Regarding claim 10, Noelle teaches that the first conveyor 1 delivers the mat 10 directly to the means intended for causing the mat of filament to pass 40 (figure 1).

d. Regarding claim 11, Noelle in view of Brabant et al. and Vuillaume et al. teach that the filamentary web is held in place on the conveyor belt by means of a suction unit (Vuillaume et al. [0036]).

e. Regarding claim 12, the modified invention of Noelle teaches that the process of the invention improves the mechanical properties (i.e. tensile strength) of the obtained cloth by thirty percent or more (column 5, lines 65-67). Thus, the ratio of the tensile strength in both directions would be preserved throughout the process apparatus.

9. Claims 6-9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noelle (US 5768756) in view of Brabant et al. (US 6050469) and Vuillaume et al. (US 2002/0168910 A1) as applied to claim 4 above, and further in view of Yoshida (US 6663373 B2).

a. Regarding claims 6-8, Noelle in view of Brabant et al. and Vuillaume et al. fail to explicitly teach that the first conveyor is more air-permeable than the first movable conveying element. Yoshida teach an apparatus for making a non-woven fabric that utilizes an endless belt where suction is affected through the endless belt (abstract). Therefore, the greater the degree of porosity, the greater the amount of suction that can be transmitted through the belt. Absent evidence of unexpected results obtained from using the claimed apparatus air-

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permeabilities, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected a suitable apparatus air-permeabilities to effectively create the needed suction, the apparatus air-permeabilities being a result effective variable routinely optimized by those of skill in the art. The optimization of a range or other variable within the claims that flows from the “normal desire of scientists or artisans to improve upon what is already generally known” is prima facie obvious. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) (determining where in a disclosed set of percentage ranges the optimum combination of percentages lies is prima facie obvious). The discovery of an optimum value of a variable in a known process is usually obvious. *In re Aller*, 220 F.2d 454, 456 (C.C.P.A. 1955). See also *In re Boesch*, 617 F.2d 272, 276 (C.C.P.A. 1980) (“[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.”). See also *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (“[I]t is not inventive to discover the optimum or workable ranges by routine experimentation.” (quoting *Aller*, 220 F.2d at 456)); *In re Kulling*, 897 F.2d 1147, 1149 (Fed. Cir. 1990) (finding no clear error in Board of Patent Appeals and Interferences’ conclusion that the amount of eluent to be used in a washing sequence was a matter of routine optimization known in the pertinent prior art and therefore obvious).

b. Regarding claim 9, Noelle teaches that the belt is porous polyester monofilament sheet (column 3, lines 55-60). Noelle in view of Brabant et al., Vuillaume et al., and Yoshida fail to explicitly teach that the components have the

claimed number of layers. The amount of porosity of a belt will affect its air permeability and therefore the suction, as stated above. Thus, the use of multiple layers will decrease the amount of porosity and in turn decreases the air permeability through the belt and suction. Absent evidence of unexpected results obtained from using the number of belt layers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected a suitable number of belt layers to effectively obtain the desired belt porosity, air permeability, and suction the number of belt layers being a result effective variable routinely optimized by those of skill in the art. The optimization of a range or other variable within the claims that flows from the “normal desire of scientists or artisans to improve upon what is already generally known” is prima facie obvious. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) (determining where in a disclosed set of percentage ranges the optimum combination of percentages lies is prima facie obvious). The discovery of an optimum value of a variable in a known process is usually obvious. *In re Aller*, 220 F.2d 454, 456 (C.C.P.A. 1955). See also *In re Boesch*, 617 F.2d 272, 276 (C.C.P.A. 1980) (“[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.”). See also *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (“[I]t is not inventive to discover the optimum or workable ranges by routine experimentation.” (quoting *Aller*, 220 F.2d at 456)); *In re Kulling*, 897 F.2d 1147, 1149 (Fed. Cir. 1990) (finding no clear error in Board of Patent Appeals and Interferences’ conclusion that the amount of eluent



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to be used in a washing sequence was a matter of routine optimization known in the pertinent prior art and therefore obvious).

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noelle (US 5768756) in view of Brabant et al. (US 6050469) and Vuillaume et al. (US 2002/0168910 A1) as applied to claim 4 above, and further in view of Porte (US 3853651).

The conveyor of Noelle operates at a conveying speed (column 4, lines 2-7 and column 5, lines 1-5) to convey the filaments to the movable conveying element (figure 1). Noelle in view of Brabant et al. and Vuillaume et al. fail to explicitly teach that the linear speed of the second conveying element is less than said conveyor linear speed. Porte teach that in an apparatus for manufacturing spun bonded non-woven fabrics (abstract), the speed of the conveyer controls the desired thickness and width of the nonwoven fabric, and also to increase the regularity or homogeneous nature, thereof (column 1, lines 8-25). Absent evidence of unexpected results obtained from using apparatus components operating at the claimed linear speeds, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected a suitable operating speeds to effectively increase the regularity or homogeneous nature of the fabrics, the operating speeds being a result effective variable routinely optimized by those of skill in the art. The optimization of a range or other variable within the claims that flows from the "normal desire of scientists or artisans to improve upon what is already generally known" is prima facie obvious. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) (determining where in a disclosed set of

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percentage ranges the optimum combination of percentages lies is prima facie obvious).

The discovery of an optimum value of a variable in a known process is usually obvious.

*In re Aller*, 220 F.2d 454, 456 (C.C.P.A. 1955). See also *In re Boesch*, 617 F.2d 272, 276 (C.C.P.A. 1980) (“[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.”). See also *In re Geisler*, 116 F.3d 1465, 1470 (Fed. Cir. 1997) (“[I]t is not inventive to discover the optimum or workable ranges by routine experimentation.” (quoting *Aller*, 220 F.2d at 456)); *In re Kulling*, 897 F.2d 1147, 1149 (Fed. Cir. 1990) (finding no clear error in Board of Patent Appeals and Interferences’ conclusion that the amount of eluent to be used in a washing sequence was a matter of routine optimization known in the pertinent prior art and therefore obvious).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAEED M. HUDA whose telephone number is (571)270-5514. The examiner can normally be reached on 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Steve Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SAEED M. HUDA/  
Examiner, Art Unit 1791

/Eric Hug/  
Primary Examiner, Art Unit 1791